

CLAIMS

1. An optical deflector comprising:
a photonic crystal section;
a light lead-in means for leading in light to
5 said photonic crystal section; and
an external force application means for
deforming said photonic crystal section by way of
mechanical external force and changing the angle of
refraction of the light led in by said light lead-in
10 section in said photonic crystal section.
2. The optical deflector according to claim 1,
wherein
said photonic crystal section is formed by a
15 member deformable by external force and said external
force application means is adapted to apply
mechanical external force to said photonic crystal
section in the direction of cyclicity of the cyclic
structure of the photonic crystal section so as to
20 shift the angle of refraction in said photonic
crystal section.
3. The optical deflector according to claim 1,
wherein
25 said external force application means is
adapted to apply mechanical external force to said
photonic crystal section in a direction perpendicular

to the direction of cyclicity of the cyclic structure of the photonic crystal section so as to shift the angle of refraction in said photonic crystal section.

5 4. The optical deflector according to claim 3,
wherein

 said photonic crystal section is formed by
using deformable pillar-shaped independent members
for forming said cyclic structure and a pair of
10 support members arranged to sandwich the independent
members in a direction perpendicular to the direction
of arrangement of the independent members.

 5. The optical deflector according to claim 4,
15 wherein

 said support members are formed by substrates
and reflection layers arranged on the surfaces of the
substrates facing said independent members.

20 6. The optical deflector according to claim 1,
wherein

 the end facet of said photonic crystal section
through which light goes out is made to show an arc-
shaped profile.

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 7. An optical switch comprising an optical
deflector according to claim 1 and a light lead-out

means for leading out light deflected to a desired direction by said optical deflector.

8. An optical scanner comprising an optical
5 deflector according to claim 1.

9. An optical deflection method characterized
by leading in light having a specific wavelength to a
photonic crystal section, shifting the angle of
10 refraction of the led in light in said photonic
crystal section by applying mechanical external force
to said photonic crystal section, thereby deflecting
the led in light.